



Attn: Robert Stein, Chairman  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

**RE: Petition of Bloom Energy Corporation, as agent for Stanley Black & Decker, for a Declaratory Ruling for the Location and Construction of a 250kW Fuel Cell Customer Side Distributed Resource at 1000 Stanley Drive New Britain.**

Dear Chairman Robert Stein:

We are submitting an original and fifteen (15) copies of the above-captioned Petition, together with the filing fee of \$625.

In the Petition, Bloom Energy Corporation ("Bloom"), as agent for Stanley Black & Decker ("Stanley"), request the Connecticut Siting Council approve the location and construction of a 250 kilowatt fuel cell and associated equipment (the "Facility"). The Facility will be located on the site of the Stanley's building at 1000 Stanley Drive New Britain (the "Site"). Electricity generated by the Facility will be consumed at the Site, and any excess electricity will be exported to the electric grid. The Facility will be fueled by natural gas.

Should you have any questions, concerns, or require additional information, please contact me at (860) 839-8373.

Sincerely,  
Bloom Energy

A handwritten signature in black ink, appearing to read "Justin Adams".

Justin Adams  
[justin.adams@bloomenergy.com](mailto:justin.adams@bloomenergy.com)  
(860) 839-8373

**STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL**

PETITION OF BLOOM ENERGY	:	PETITION NO. ____
CORPORATION AS AGENT FOR STANLEY	:	
BLACK AND DECKER FOR A DECLARATORY	:	
RULING FOR THE LOCATION AND	:	
CONSTRUCTION OF A 250-KILOWATT FUEL	:	
CELL CUSTOMER-SIDE DISTRIBUTED	:	November 29, 2016
RESOURCE AT 1000 STANLEY DRIVE, NEW		
BRITAIN, CONNECTICUT		

PETITION OF BLOOM ENERGY CORPORATION AS AGENT FOR IKEA FOR A  
DECLARATORY RULING

Pursuant to Conn. Gen. Stat. §§ 4-176 and 16-50k(a) and Conn. Agencies Regs. § 16-50j-38 et seq., Bloom Energy Corporation (“Bloom”), as agent for Stanley Black & Decker (“SB&D”), requests that the Connecticut Siting Council (“Council”) approve by declaratory ruling the location and construction of a customer-side distributed resources project comprised of one (1) new ES-5 Bloom Energy Servers solid oxide fuel cells and associated equipment (the “Facility”), providing 250-kilowatts (“kW”) (net) of power to the SB&D building located at 1000 Stanley Drive New Britain, CT Connecticut (the “Site”). *See* Exhibit 1. The Facility will be installed, maintained and operated by Bloom and owned Key Equipment Finance, a third-party financing source of Bloom under an agreement with SB&D.

Conn. Gen. Stat. § 16-50k(a) provides that:

Notwithstanding the provisions of this chapter or title 16a, the council shall, in the exercise of its jurisdiction over the siting of generating facilities, approve by declaratory ruling . . . (B) the construction or location of any fuel cell, unless the council finds a substantial adverse environmental effect or of any customer-side distributed resources project or facility . . . with a capacity of not more than sixty-five megawatts, as long as such project meets air and water quality standards of the Department of Energy and Environmental Protection.”



The proposed Facility will be a customer-side distributed resource facility under 65 megawatts (“MW”) that complies with the air and water quality standards of the Department of Energy and Environmental Protection (“DEEP”). Bloom submits that no Certificate is required because the proposed modifications would not have a substantial adverse environmental effect in the immediate vicinity of the Facility as well as in the State of Connecticut.

## **I. COMMUNICATIONS**

Correspondence and other communication regarding this petition should be directed to the following parties:

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## **II. DISCUSSION**

### **A. Project Description and Purpose**

The Facility will be 250kW customer-side distributed resources consisting of two state-of-the-art Bloom Energy Servers and associated equipment. The Facility will be interconnected to the electrical room located at the southwesterly building corner of the SB&D building (the “Building”). *See Exhibit 2.*

The proposed Facility is a “customer-side distributed resources” project because it will be “a unit with a rating of not more than sixty-five megawatts [and is located] on the premises of an industrial end user within the transmission and distribution system including, but not limited to, fuel cells . . . .” Conn. Gen. Stat. § 16-1(a)(40)(A). Further, in its Final Decision in Docket No.

12-02-09, dated September 12, 2012, the Connecticut Public Utilities Regulatory Authority (“PURA”) determined that Bloom’s Energy Server qualifies as a Class I renewable energy source fuel cell as defined in Conn. Gen. Stat. §16-1(a)(26)(A). *See* Exhibit 3.

The purpose of the proposed Project is to replace the average baseload of the Building with a Class I renewable energy source, achieve corporate sustainability goals, and improve reliability of electrical systems and equipment. Bloom compiled monthly electric usage data for the Building and sized the facility to provide enough power to meet 80% of the average electric base load under normal operating conditions. Electricity generated by the Facility will be consumed primarily at the Site, and any excess electricity will be exported to the grid.

## **B. The Facility**

The Facility will consist of one Bloom solid oxide fuel cell Energy Server and associated equipment. The dimensions of the Facility are approximately 30 feet long, 4 feet wide and 7 feet high. The Energy Server module is enclosed, factory-assembled and tested prior to installation on the Site. *See* Exhibit 6.

The Facility will be capable of producing 250 kW of continuous, reliable electric power. The Facility will interconnect to the Site’s distribution system and operate in parallel with the grid to provide the Site’s electrical requirements. Any electricity generated in excess of the Site’s requirement will be exported to the grid in accordance with the Eversource Generator Interconnection technical requirements. This site will not have an uninterruptible power module (“UPM”) and thus will not have any means to output power in a grid independent capacity at any time. The interconnection will be provided from the existing switch located inside the electrical room. The interconnection application for the Facility was submitted and under review at the

time this petition was filed. The Energy Server will be fueled by natural gas supplied by Connecticut Natural Gas.

The Facility, and more specifically the inverters within, are UL1741/IEEE1547 compliant and thus will not operate without a stable utility voltage available. In the event of an outage the Facility will not automatically shut down, they will enter a state of stand-by awaiting the return of a stable utility voltage. When in a state of complete shut down the Energy Server require a combination of remote and on-site coordination to start up the systems. This work is performed by Bloom employed, trained and certified personnel only, Stanley Black & Decker does not control the operation of the system directly. In accordance with Public Act 11-101<sup>1</sup>, the Emergency Response Plan provided to Stanley and its employees is shown in Exhibit 7.

The Facility will have extensive hardware, software and operator safety control systems, designed into the system in accordance with ANSI/CSA America FC 1-2004, the American National Standards Institute and Canadian Standards Association standard for Stationary Fuel Cell Power Systems. The Energy Servers are remotely monitored by Bloom 24 hours a day, seven days a week. If software or hardware safety circuits detect an unsafe condition, variation in temperature or gas pressure outside of operational parameters, fuel supply is automatically stopped and the system is shut down. Two manual fuel shut-off valves are provided at each installation site, and two normally closed, safety shut-off rated isolation valves are installed within the system. In accordance with Public Act 11-101<sup>2</sup>, the fuel lines (pipe) cleaning procedure are to purge for 60 seconds with 10 blasts of on off with an inert gas prior to

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<sup>1</sup> An Act Adopting Certain Safety Recommendations of the Thomas Commission

<sup>2</sup> Public Act 11-101, An Act Adopting Certain Safety Recommendations of the Thomas Commission,

connecting to the Facility. The Facility will be installed in compliance with all applicable building, plumbing, electrical, and fire codes.

Bloom Energy Servers are installed in accordance with NFPA 853<sup>3</sup>. This standard provides fire prevention and fire protection requirements for safeguarding life and physical property associated with buildings or facilities that employ stationary fuel cell systems of all sizes. The risk of fire related to the operation of the Energy Server is therefore very low. Furthermore, in the Energy Server, natural gas is not burned; it is used in a chemical reaction to generate electricity. The natural gas is digested almost immediately upon entering the unit and is no longer combustible. As stated above, any variation in heat outside of the operational parameters will trigger an automatic shutdown of the energy server.

## **C. Existing Environment**

### **i. The Site**

The Facility would be installed entirely within the SB&D property located at 1000 Stanley Drive New Britain Connecticut. The property in question is located within two municipalities, New Britain and Farmington. All work associated with the facility will occur in New Britain. Specifically, the Facility will be constructed on the 14.46-acre property (“the Site”) that surrounds the Building. The Site is zoned as “Office and Public District” (“OP”) under the zoning regulations of the City of New Britain (the “City”). The majority of the areas surrounding the property are zoned under OP and Single Family residential (S2&S3).

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<sup>3</sup> Standard for the Installation of Stationary Fuel Cell Power Systems, 2015 Edition

The Facility would be located on a concrete pad within an existing landscaped island within the parking lot. No parking spaces will be eliminated at the proposed location. Photos of the proposed location and adjacent areas are provided in Exhibit 4.

#### ii. Wildlife, Habitat and Cultural Resources

A review of the publically available Natural Diversity Database (NDDDB) has shown no known occurrences of state-listed species within the proposed Facility location. Furthermore, the proposed Facility will be located within a landscape island that was previously developed and disturbed during construction of the Building and contains no wetlands or cultural resources. Therefore, the construction and operation of the Facility will not have a substantial adverse effect on wetlands, state-listed species, and cultural (archaeological and historical) resources.

#### iii. Flood and Coastal Zones

A review of the flood hazard mapping data from Federal Emergency Management Agency's ("FEMA") National Flood Insurance Program ("NFIP") has shown the Facility would not be located within a 100- year flood zone. The Site was also reviewed for proximity to the Coastal Boundary, which delineates the coastal boundary of Connecticut as defined in the Connecticut Coastal Management Act.

### **D. Environmental Effects and Mitigation**

#### i. Natural Gas Desulfurization Process

The first step in the production of electricity in the Bloom Energy server is desulfurization – the removal of the sulfur compounds, which have been added to the natural gas as an odorant by the natural gas suppliers. This step occurs in the desulfurization unit – a canister which contains a filter made for this purpose. Sulfur is not “produced” in this process, but is

separated from the natural gas in which it was contained. In this process, trace levels of sulfur oxides and other naturally occurring elements, such as benzene, may also absorb to the filter. In this process, the catalyst may also pick up some benzene and in some cases exceed the RCRA threshold. The catalysts are sent to a central location and processed by a qualified facility in Texas. Again, these are not “produced” from the process, but are separated from the natural gas in which they were contained. The filter is made up of inert materials.

The desulfurization process takes place entirely within desulfurization canisters. These are made of extruded aluminum or zinc-plated steel that are built to last for the life of the Energy Server and beyond. Because they are built to hold natural gas, their structural integrity is essential. That integrity is assured by around the clock monitoring of the Energy Servers to detect any leak. Were there a leak, the Server (including the desulfurization operation) would shut down automatically. There has never been a leak from one of the desulfurization canisters. The structural integrity and leak prevention continues after the desulfurization canisters are removed from service. At that point, the entry and exit points for the natural gas automatically seal shut. The desulfurization canister remains sealed and is not opened at the Site, or anywhere in the State of Connecticut.

Within days that a desulfurization canister is taken out of service, it is picked up by a Bloom contractor and taken to a licensed facility outside the State, where the desulfurization unit is opened and the contents are removed. As described above, the desulfurization unit has complete structural integrity. Its safety as a container for transporting has been certified by the Department of Transportation (DOT). This certification assures that the canisters are secure and





have the structural integrity to transport the desulfurization materials safely and without risk of a release.

Bloom has been engaged and expects to have further follow up discussion with regulators on the proper management of materials found in all public pipeline natural gas supplied to homes and businesses, which we filter before that fuel is consumed by our product to produce clean, environmentally friendly electric power. Because our technology is relatively new, the 35 year old regulations do not address our situation, but we have been working with the regulators to obtain clarification.

#### ii. Water, Heat and Emissions

The construction and operation of the Facility will comply with DEEP's air and water quality standards and will not have a substantial adverse environmental effect.

With respect to water discharges, the Energy Servers are designed to operate without water discharge under normal operating conditions. There are no connections or discharge points to the proposed Facility. Additionally, the Facility would use no water during normal operation beyond a 75-gallon injection at start up.

Heat generated by the proposed Facility is used internally to increase the electrical efficiency of the fuel cell system. As a result there is no useful waste heat generated by the fuel cell. The minimal amount of thermal load present at the host site would preclude the efficient deployment of a combined heat and power application.

Conn. Agencies Regs. § 22a-174-42, which governs air emissions from new distributed generators, exempts fuel cells from air permitting requirements. Accordingly, no permits, registrations, or applications are required based on the actual emissions from the Facility. See

Conn. Agencies Regs. §§ 22a-174-42(b) and (e). Even though the fuel cell systems are exempt from the emissions requirements, Bloom Energy does meet the emissions standards of Section 22a-174-42. Per Section 22a-174-42(e)(1)(A) a certification by the California Air Resources Board pursuant to Title 17, sections 94200 through 94214 of the California Code of Regulations meets the requirements of the DEEP Section 22a-174-42. The Bloom Energy fuel cells are certified under the California Air Resources Board (CARB) distributed generation program. A current list of certified application are provided on the CARB's distributed generation certification website (<http://www.arb.ca.gov/energy/dg/eo/eo-current.htm>). The Facility will also meet state criteria thresholds and projected emissions for all greenhouse gases defined in Section 22a-174-1(49) as shown in Table 1. By virtue of the non-combustion process the Bloom fuel cells virtually eliminate NO<sub>x</sub>, SO<sub>x</sub>, CO, VOCs and particulate matter emissions from the energy production process. Similarly, there are no CH<sub>4</sub>, SF<sub>6</sub>, HFC or PFC emissions. The CH<sub>4</sub> is broken down in the reforming process. Reforming is the type of process where if you have sufficient catalyst, the reaction can go all the way to completion. That is the case for the Bloom Energy Server. The fuel is reformed in the hot box – with a very significant excess catalyst for reaction.

The proposed Facility will ultimately displace less efficient fossil fueled marginal generation on the ISO New England system. Based upon US Environmental Protection Agency (EPA) “eGrid” data the proposed facility is expected to reduce carbon emissions by more than 25% while essentially eliminating local air pollutants like NO<sub>x</sub>, SO<sub>x</sub>, and particulate matter.

Table 1: Connecticut Thresholds for Greenhouse Gases

Emission Type	Bloom Output	LERC allowance
Nitrous Oxides (NOx)	<0.01 lbs/MWh	0.07 lbs/MWh
Carbon Monoxide (CO)	<0.10 lbs/MWh	0.10 lbs/MWh
Sulfur Oxides (SOx)	Negligible	Not Listed
Volatile Organic Compounds (VOCs)	<0.02 lbs/MWh	0.02 lbs/MWh
Carbon Dioxide (CO2) See note 1	735-832 lbs/MWh	Not Listed

Note 1: Carbon Dioxide is measured at Bloom's stated lifetime efficiency level of 53-60%

### iii. Sound Levels

It is not anticipated for sound to have any negative impact generated by the Facility to the surrounding properties. The closest property is a residential house, adjacent to the parking lot, located approximately 250 linear feet south. Additionally, between the parking lot and residential house there is a heavily wooded portion of land that could potentially further mitigate sound generation from the facility. Based on sound data performed by Bloom Energy, the anticipated sound levels at the property boundary would be approximately 41dB and in compliance with noise criteria set forth in Connecticut regulations for the Control of Noise.

### iv. Visual Effects

The location was chosen to promote SB&D use of alternative energy without being a focal center of the property. The location of the facility was placed on the peripheral of the site within a landscape island in the parking lot. The visibility of the facility will be softened by the existing landscaping already in place.

## E. Project Construction and Maintenance

During construction, appropriate erosion and sedimentation (E&S) controls will be installed and areas of disturbance will be promptly stabilized in order to minimize the potential for soil erosion and the flow of sediments off site. Temporary E&S control measures will be

maintained and inspected throughout construction to ensure their integrity and effectiveness. The temporary E&S control measures will remain in place until the work is complete and all disturbed areas have been stabilized. Due to the limited disturbance required for the Facility's installation, no construction-related storm water permits will be required. Further, the facility will not affect drainage patterns or storm water discharge.

Construction-related impacts will be minimal. The Facility will be located within an existing landscape island adjacent to the southwest corner of the Building. All utilities will be installed within the grass and asphalt area and along the front face of the Building. All utility trenches will be restored in-kind.

### **III. COMMUNITY OUTREACH**

Bloom has provided notice of this petition to all persons and appropriate municipal officials and governmental agencies to whom notice is required to be given pursuant to Conn. Agencies Regs. § 16-50j-40(a).<sup>4</sup> A copy of the notice letter and a service list are provided in Exhibit 9 and the corresponding abutters map is provided in Exhibit 10. Additionally, prior to filing this petition, representatives from Bloom briefly discussed the proposed Facility with the City of New Britain Zoning Board. An opportunity to comment on the proposed Site Plan has been provided to the Mayor and City Planner to incorporate any design comments they may have. *See* Exhibit 9.

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<sup>4</sup> Conn. Agencies Regs. § 16-50j-40(a) requires that "[p]rior to submitting a petition for a declaratory ruling to the Council, the petitioner shall, where applicable, provide notice to each person other than the petitioner appearing of record as an owner of property which abuts the proposed primary or alternative sites of the proposed facility, each person appearing of record as an owner of the property or properties on which the primary or alternative proposed facility is to be located, and the appropriate municipal officials and government agencies [listed in Section 16-50/ of the Connecticut General Statutes]."

#### **IV. BASIS FOR GRANTING OF THE PETITION**

Under Conn. Gen. Stat. § 16-50k(a), the Council is required to approve by declaratory ruling the construction or location of a customer-side distributed resources project or facility with a capacity of not more than 65 MW, as long as the facility meets DEEP air and water quality standards. The proposed Facility meets each of these criteria. The Facility is a “customer-side distributed resources” project, as defined in Conn. Gen. Stat. § 16-1(a)(40)(A), because the Facility is “a unit with a rating of not more than sixty-five megawatts [and is located] on the premises of a retail end user within the transmission and distribution system including, but not limited to, fuel cells” and, as demonstrated herein, will meet DEEP air and water quality standards. In addition, as demonstrated above, the construction and operation of the Facility will not have a substantial adverse environmental effect in the State of Connecticut.

#### **V. CONCLUSION**

For the reasons stated above, Bloom, as agent for Stanley Black & Decker, respectfully requests that the Council approve the location and construction of the Facility by declaratory ruling.

Respectfully submitted,

Bloom Energy Corporation

By: \_\_\_\_\_

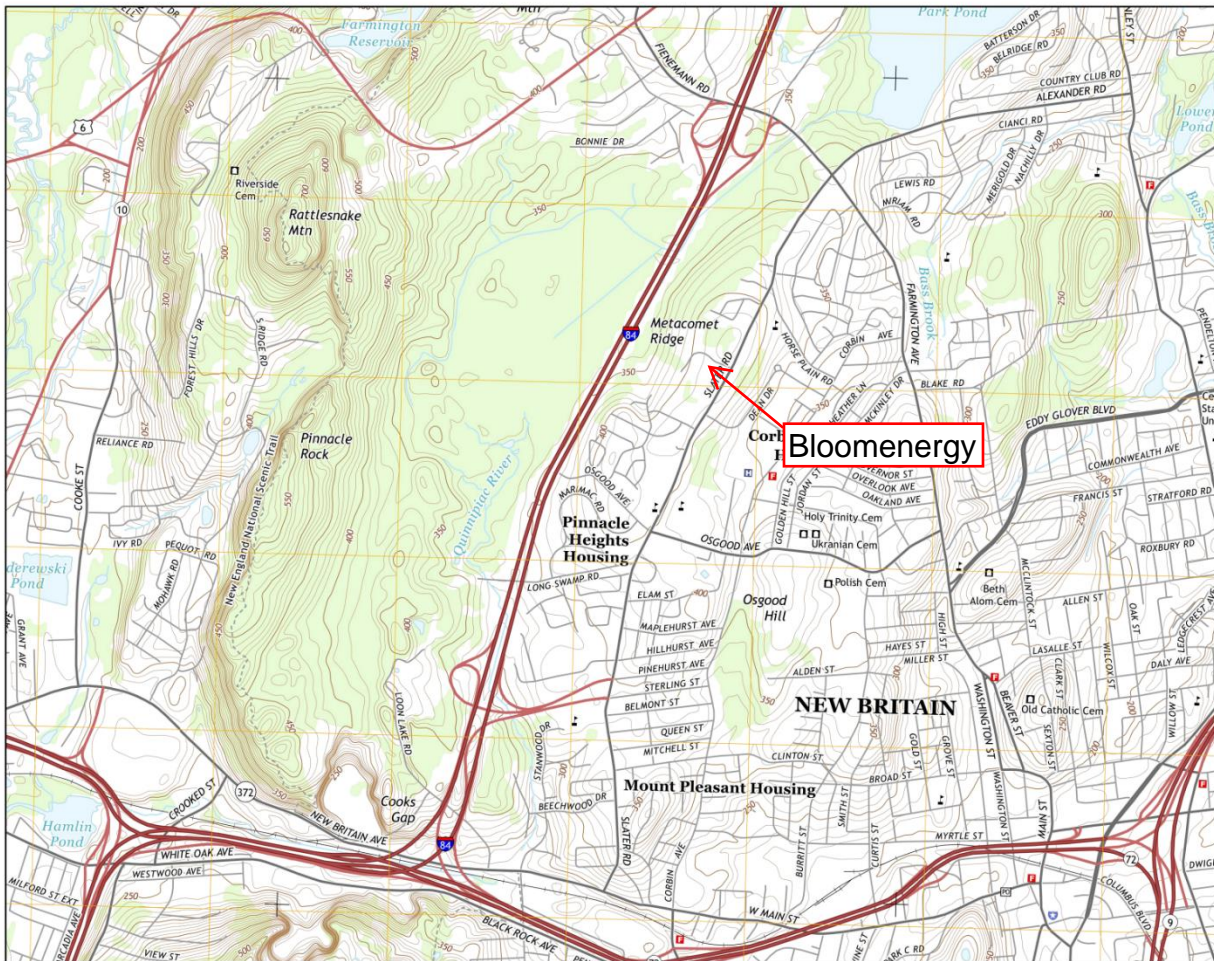
Justin Adams  
Bloom Energy Corporation  
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Sunnyvale, CA 94089  
Telephone: (408) 338-7452  
Email: [justin.adams@bloomenergy.com](mailto:justin.adams@bloomenergy.com)



## EXHIBITS

- Exhibit 1: Site Location Map
- Exhibit 2: Site Plan
- Exhibit 3: Final Decision, PURA Docket No. 12-02-09, *Petition of Bloom Energy Corporation for a Declaratory Ruling that Its Solid Oxide Fuel Cell Energy Server Will Qualify as a Class I Renewable Energy Source* (Sept. 12, 2012)
- Exhibit 4: Photos of the proposed location
- Exhibit 5: Bloom Energy Server Product Datasheet and General Installation Overview
- Exhibit 6: Emergency Response Plan
- Exhibit 7: Notice Pursuant to Conn. Agencies Regs. § 16-50j-40(a)
- Exhibit 8: Abutters Map
- Exhibit 9: Letter to Mayor and City Planner

## **Exhibit 1**



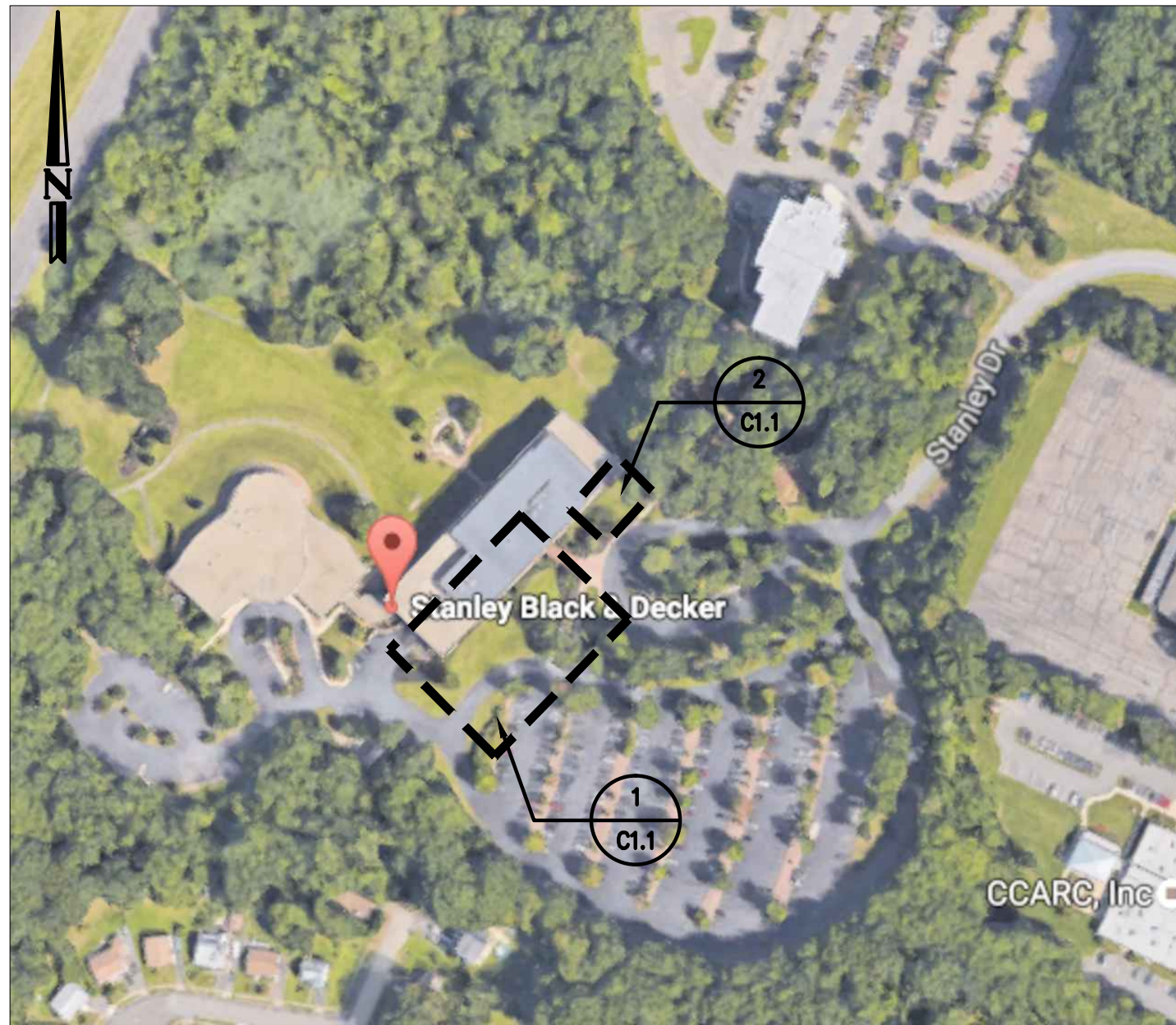


Job #:	20161416	 <p>3 Executive Drive, Suite 340 Somerset, NJ 08873 t: 732.537.0811 f: 732.537.0831</p>	 1252 Orleans Drive, Sunnyvale, CA 94089 Tel: 408.543.1500 Fax: 408.543.1501
Scale:	1" = 2000'		1000 Stanley Drive New Britain, CT 06053
Date:	10/27/2016		SITE LOCATION MAP USGS MAP
Drawn By:	PD		



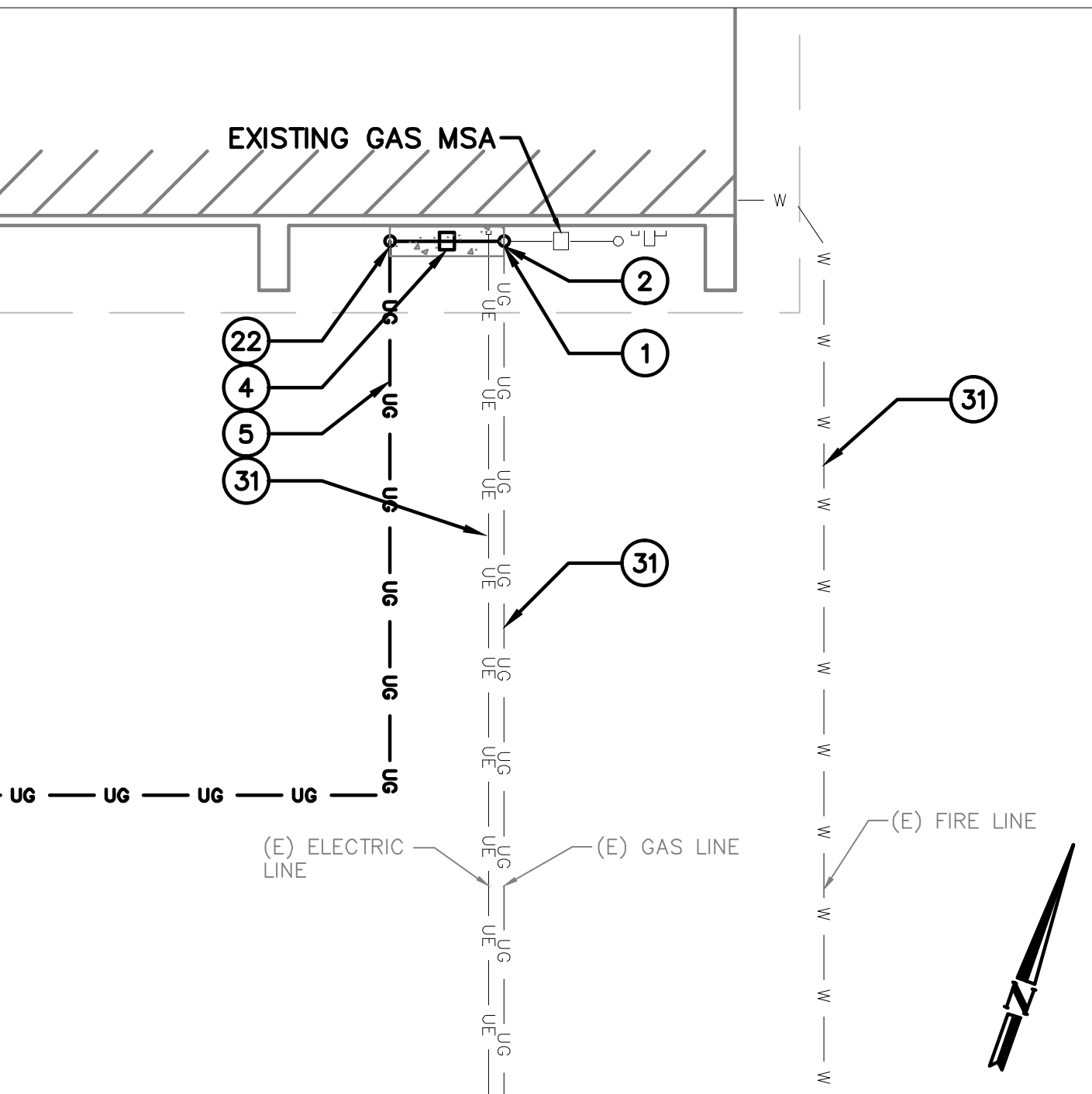
## **Exhibit 2**





## OVERALL SITE PLAN

SCALE: 1" = 200'



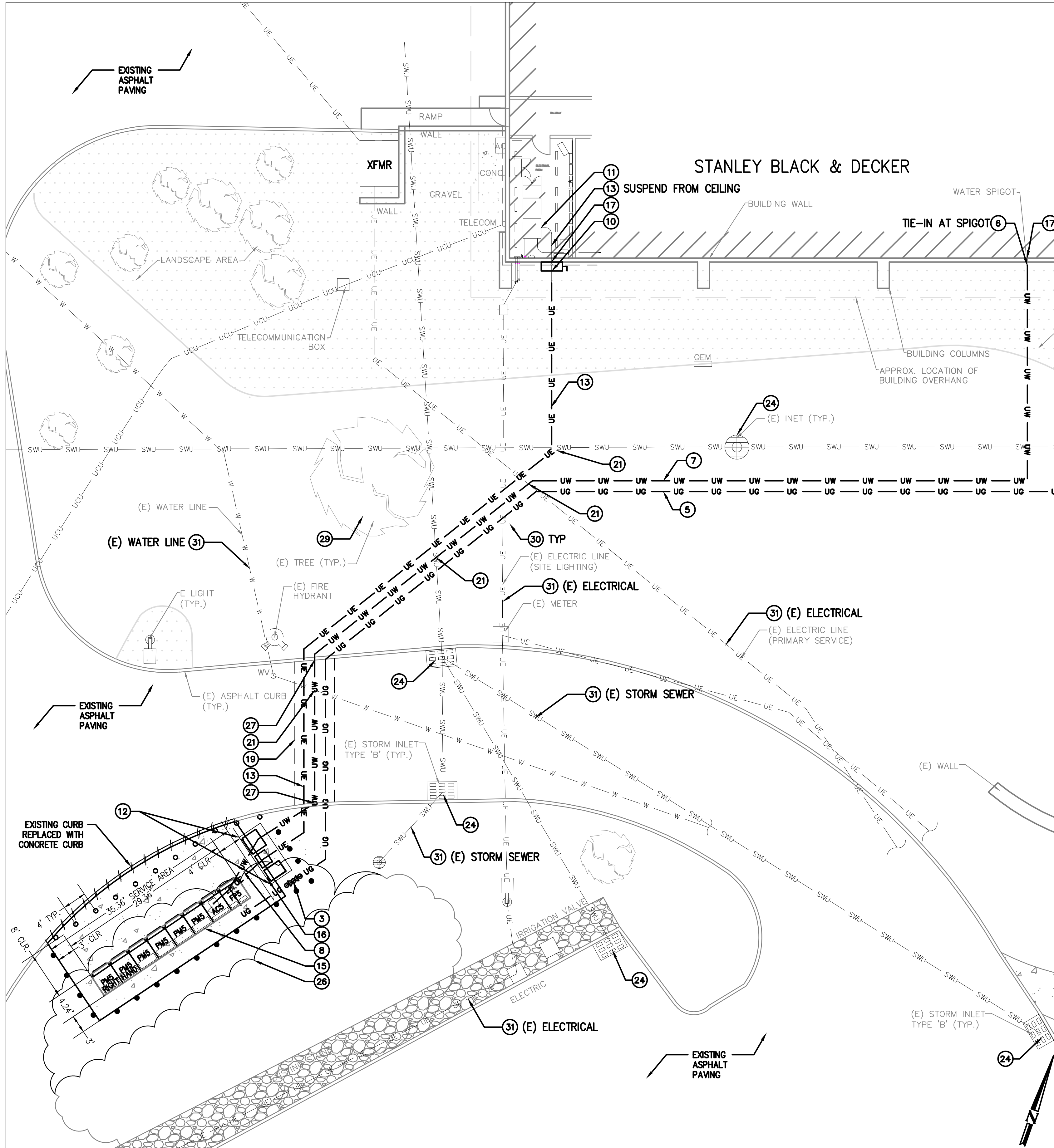
## OVERALL SITE PLAN

SCALE: 1" = 200'



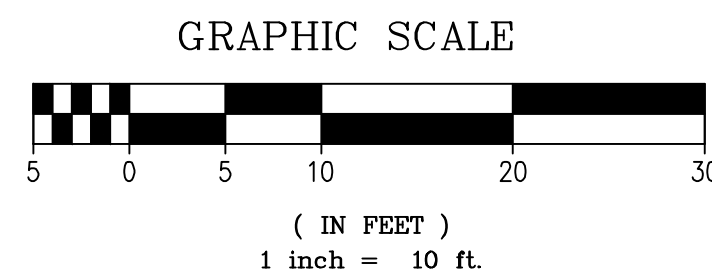
### GENERAL NOTES

- CLEAN AND PRIME ALL NEW WIRE MOUNTED PIPING AND CONDUIT. PIPING AND CONDUIT SHALL BE PAINTED WITH EXTERIOR GRADE PAINT TO MATCH EXISTING.
- CONDUITS AND PIPES MOUNTED TO BUILDING WALL SHALL BE SUPPORTED AS PER LOCAL CODE, RUN AT HEIGHT ABOVE DOORWAYS, AND STAND OFF WALL TO AVOID EXISTING CONDUITS AND PIPES.
- SLOPE LINES SHOWN ARE APPROXIMATE AND INTENDED TO SHOW THE GENERAL DIRECTION OF WATER RUN OFF; SLOPE LINES ARE DRAWN PER VISUAL SURVEY OF SURROUNDING AREA.



## DETAILED SITE PLAN

SCALE: 1" = 10'



- NEW UTILITY PROVIDED AND INSTALLED GAS METER & REGULATOR ASSEMBLY WITH SHUT-OFF VALVE. CONTRACTOR SHALL PROVIDE PAD PER DETAILS IF REQUIRED BY UTILITY COMPANY. COORDINATE ALL CONNECTIONS WITH GAS UTILITY.
- NEW UNDERGROUND GAS SERVICE TAP BY UTILITY COMPANY. COORDINATE WITH GAS UTILITY. CONTRACTOR SHALL PERFORM COMPACTION AND MATCH EXISTING SURFACE AND GRADE. CONTRACTOR SHALL COORDINATE GAS PIPE SIZING AND INSTALLATION REQUIREMENTS WITH UTILITY.
- NEW PRIVATE GAS RISER FOR CLEAN ENERGY SERVER WITH SHUT-OFF VALVE. MAINTAIN MINIMUM 3'-0" CLEARANCE FROM ALL IGNITION SOURCES & WET UTILITIES.
- NEW GAS PIPE FROM PROPOSED GAS TAP TO TERMINATE AT THE PROPOSED UTILITY MSA INSTALLED BY UTILITY COMPANY. SIZE(S) & TRENCHING REQUIREMENTS PER UTILITY COMPANY.
- NEW GAS PIPE SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. REFER TO GAS RISER DETAIL FOR ADDITIONAL REQUIREMENTS.
- TAP EXISTING WATER LINE AT NEAREST ACCESSIBLE LOCATION IN BUILDING AS SHOWN WITH A LOCAL SHUT-OFF VALVE. REFER TO DOMESTIC WATER CONNECTION DETAIL FOR ADDITIONAL REQUIREMENTS.
- NEW WATER PIPE SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. REFER TO WATER RISER DETAIL FOR ADDITIONAL REQUIREMENTS.
- NEW ELECTRICAL CONDUIT & WIRES FROM PROPOSED ES UNIT TO PROPOSED PDS TO PROPOSED DISCONNECT TO PROPOSED TRANSFORMER WITH FINAL TERMINATION AT EXISTING SWITCHGEAR.
- NOT USED
- NEW BLOOM PROVIDED, CONTRACTOR INSTALLED, DISCONNECT SWITCH. MOUNT TO WALL PER MANUFACTURER AND UTILITY SPECIFICATIONS.
- CONTRACTOR SHALL TERMINATE ELECTRIC FEEDER AS SHOWN. REFER TO ELECTRICAL SINGLE LINE DIAGRAM FOR ADDITIONAL REQUIREMENTS.
- CONTRACTOR SHALL PROVIDE TWO GROUNDING RODS TO BE PLACED 6' APART MINIMUM. REFER TO ELECTRICAL SINGLE LINE DIAGRAM FOR ADDITIONAL REQUIREMENTS.
- NEW ELECTRICAL FEEDER SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. REFER TO ELECTRICAL SINGLE LINE DIAGRAM FOR ADDITIONAL REQUIREMENTS.
- NOT USED.
- NEW BLOOM ENERGY SERVER. REFER TO BLOOM STANDARD INSTALLATION DRAWING SET FOR ADDITIONAL ENERGY SERVER DETAILS.
- FACTORY WIRE ENERGY SERVER EMERGENCY POWER-OFF SWITCH (EPO).
- CONTRACTOR SHALL CORE CONDUIT AND/OR PIPE THROUGH WALL. SCAN WALL PRIOR TO CORING TO AVOID COLLATERAL DAMAGE TO EXISTING PLUMBING AND WIRING. REFER TO WALL PENETRATION DETAIL FOR ADDITIONAL REQUIREMENTS.
- NOT USED
- CONTRACTOR SHALL PROVIDE SAWCUT TRENCH FOR UNDERGROUND UTILITIES IN THIS LOCATION AND HAND DIG TRENCHES WHERE THEY CROSS EXISTING UTILITIES. REFER TO UNDERGROUND/TRENCH CONDUIT AND PIPING DETAIL FOR ADDITIONAL REQUIREMENTS.
- NOT USED
- PROTECT EXISTING UNDERGROUND UTILITY LINES FROM DAMAGE WHEN CROSSING WITH NEW UNDERGROUND UTILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ANY DAMAGED LINES.
- CONTRACTOR SHALL PROVIDE NEW CONDUIT AND CABLE FROM NEW UTILITY GAS MSA TO CUSTOMER MPOE FOR UTILITY BILLING. REFER TO BLOOM ENERGY PRODUCT INSTALLATION DRAWINGS FOR CONNECTION REQUIREMENTS.
- NOT USED.
- PROVIDE "DANDY SACK" OR EQUAL WITH OUTFLOW PORTS AT STORM DRAIN INLET. REFER TO EROSION CONTROL DETAIL FOR ADDITIONAL REQUIREMENTS.
- NOT USED.
- CONTRACTOR SHALL TRIM EXISTING TREES FOR 10'-0" CLEARANCE TO ENERGY SERVER TOP VENTS AND 6'-0" CLEARANCE TO ALL OTHER SURFACES OF ENERGY SERVER.
- CONTRACTOR SHALL UNDER-CUT EXISTING CURB FOR TRENCHING UTILITY LINES AND BACKFILL WITH CONCRETE SLURRY. IF CURB IS DAMAGED, REPAIR TO MATCH EXISTING.
- NOT USED.
- CONTRACTOR SHALL PROVIDE TREE PROTECTION. REFER TO TREE PROTECTION DETAIL FOR ADDITIONAL REQUIREMENTS.
- CONTRACTOR SHALL PROVIDE TURF RESTORATION. REFER TO TURF RESTORATION DETAIL FOR ADDITIONAL REQUIREMENTS.
- THE LOCATION OF EXISTING UTILITIES IS SHOWN FOR THE CONTRACTOR'S REFERENCE. EXACT LOCATION, DEPTH AND SIZE OF ALL EXISTING UTILITIES IS NOT KNOWN. CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ALL EXISTING UTILITIES NOT SHOWN ON THESE DRAWINGS

**Bloomenergy**  
1299 ORLEANS DRIVE  
SUNNYVALE, CA 94089  
PROPRIETARY AND CONFIDENTIAL

BLOOM ENERGY CORPORATION ALL RIGHTS RESERVED. THIS DOCUMENT IS FOR REFERENCE ONLY AND MAY NOT BE USED WITHOUT THE WRITTEN PERMISSION OF BLOOM ENERGY. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT PERMISSION OF BLOOM ENERGY IS PROHIBITED.

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CUSTOMER SITE  
**STANLEY BLACK & DECKER**  
1020 SLATER ROAD  
NEW BRITAIN, CT 06053

**StanleyBlack&Decker**

REVISION HISTORY		
REV	REVISION ISSUE	DATE

DESIGNED BY PRIYA DAHDUK	DATE 11/11/2016
DRAWN BY PRIYA DAHDUK	DATE 11/11/2016
REVIEWED BY RICHARD PROCANIK	DATE 11/11/2016

SHEET TITLE  
**DETAILED SITE PLAN**

DRAWING NUMBER  
**C1.1**

BLOOM DOCUMENT  
**DOC-1007342**

THIS DRAWING IS 24" X 36" AT FULL SIZE  
SITE ID: LMD000.0 SHEET XX OF 11



## **Exhibit 3**



# STATE OF CONNECTICUT

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION  
PUBLIC UTILITIES REGULATORY AUTHORITY  
TEN FRANKLIN SQUARE  
NEW BRITAIN, CT 06051

**DOCKET NO. 12-02-09    PETITION OF BLOOM ENERGY CORPORATION FOR A  
DECLARATORY RULING THAT ITS SOLID OXIDE FUEL  
CELL ENERGY SERVER WILL QUALIFY AS A CLASS I  
RENEWABLE ENERGY SOURCE**

September 12, 2012

By the following Directors:

Arthur H. House  
John W. Betkoski, III

## **DECISION**

### **I.     INTRODUCTION**

By Petition dated February 14, 2012, pursuant to Section 4-176 in the General Statutes of Connecticut (Conn. Gen. Stat.) and Section 16-1-113 in the Regulations of Connecticut State Agencies, Bloom Energy Corporation requests that the Public Utilities Regulatory Authority (Authority) issue a declaratory ruling that its solid oxide fuel cell energy server qualifies as a Class I renewable energy source.

## II. PETITIONER'S EVIDENCE

Bloom Energy Corporation (Bloom) has commercialized a scalable, modular fuel cell using Bloom's patented solid oxide fuel cell (SOFC) technology. A fuel cell is a device that uses a fuel and oxygen to create electricity by an electrochemical process. A single fuel cell consists of an electrolyte and two catalyst-coated electrodes (an anode cathode). Fuel cells are generally categorized by the type of electrolyte used. Petition, pp. 2 and 3.

Each Bloom Energy Server consists of thousands of Bloom's patented SOFCs. Each fuel cell is a flat, solid ceramic square capable of producing at least 25 watts. In an energy server, Bloom "sandwiches" the SOFCs between metal interconnect plates into a fuel cell "stack." Bloom aggregates multiple fuel cell stacks together into a "power module," and then multiple power modules, along with a common fuel input and electrical output, are assembled as a complete energy server fuel cell. Id., p. 3.

The Bloom Energy Server converts the chemical energy contained in fuel, such as natural gas, into electricity at an efficiency of approximately 50% - 60% (lower heating value net AC) without any combustion or multi-stage conversion loss. Fuel entering the energy server is processed using a proprietary catalytic method to yield a reformat gas stream, and the gaseous product and preheated air are introduced into the fuel cell stacks. Within the stacks, ambient oxygen reacts with the fuel to produce direct current (DC) electricity. The DC power produced by the energy server system is converted into 480-volt AC power using an inverter, and delivered to the host facility's electrical distribution system. Id.

SOFCs operate at very high temperatures, obviating the need for expensive metal catalysts. With low cost ceramic materials, and extremely high electrical efficiencies, SOFCs can deliver attractive economies without relying on combined heat and power. Id.

Bloom Energy Servers are a fraction of the size of a traditional base load power source, with each server occupying a space similar to that of a parking space. This small, low-impact, modular form of base load power does not pose the environmental challenges associated with a traditional base load power plant, significantly reducing environmental impacts. Moreover, Bloom's innovative design requires only an initial input of 120 gallons of water per 100 kW, after which no additional water is consumed during normal operation. Id., pp. 3 and 4.

Bloom Energy Servers deliver significant environmental benefits over conventional base load technologies. In addition to significant CO<sub>2</sub> reductions due to its high efficiency, the energy server emits virtually no NO<sub>x</sub>, SO<sub>x</sub>, or other smog forming particulates since the conversion of gas to electricity in a Bloom Energy Server is done through an electrochemical reaction rather than combustion. Id., p. 4.

### III. AUTHORITY ANALYSIS

Conn. Gen. Stat. §16-1(a)(26) defines a Class I renewable energy source as:

(A) energy derived from solar power; wind power; a fuel cell; methane gas from landfills; ocean thermal power; wave or tidal power; low emission advanced renewable energy conversion technologies; a run-of-the-river hydropower facility provided such facility has a generating capacity of not more than five megawatts, does not cause an appreciable change in the river flow, and began operation after the effective date of this section; or a biomass facility, including, but not limited to, a biomass gasification plant that utilizes land clearing debris, tree stumps or other biomass that regenerates or the use of which will not result in a depletion of resources, provided such biomass is cultivated and harvested in a sustainable manner and the average emission rate for such facility is equal to or less than .075 pounds of nitrogen oxides per million BTU of heat input for the previous calendar quarter, except that energy derived from a biomass facility with a capacity of less than five hundred kilowatts that began construction before July 1, 2003, may be considered a Class I renewable energy source, provided such biomass is cultivated and harvested in a sustainable manner; or (B) any electrical generation, including distributed generation, generated from a Class I renewable energy source.

Based on Bloom's assertions, the Authority finds that its Bloom Energy Server qualifies as a Class I renewable energy source "fuel cell" as defined in Conn. Gen. Stat. §16-1(a)(26)(A).

The Authority has created an electronic application process for generation owners to apply for a Connecticut Renewable Portfolio Standards registration. The application is available on the Authority's website at the web address <http://www.ct.gov/pura>. The application should be submitted electronically along with a single hard-copy filing. While the Authority concludes in this Decision that the Bloom Energy Server would qualify as a Class I renewable energy source pursuant to Conn. Gen. Stat. §16-1(a)(26), Bloom must still apply for registration of the aforementioned system once the facility becomes operational and is registered in the New England Generation Information System.

#### **IV. CONCLUSION**

Based upon the project as described herein, the Authority finds that, as proposed, the Bloom Energy Server would qualify as a Class I renewable energy source. However, since the energy server is not yet operational, it should apply for Class I registration once it begins operations.

**The Connecticut Department of Energy and Environmental Protection is an Affirmative Action/Equal Opportunity Employer that is committed to requirements of the Americans with Disabilities Act. Any person with a disability who may need information in an alternative format may contact the agency's ADA Coordinator at 860-424-3194, or at [deep.hrmed@ct.gov](mailto:deep.hrmed@ct.gov). Any person with limited proficiency in English, who may need information in another language, may contact the agency's Title VI Coordinator at 860-424-3035, or at [deep.aaoffice@ct.gov](mailto:deep.aaoffice@ct.gov). Any person with a hearing impairment may call the State of Connecticut relay number – 711. Discrimination complaints may be filed with DEEP's Title VI Coordinator. Requests for accommodations must be made at least two weeks prior to any agency hearing, program or event.**

**DOCKET NO. 12-02-09    PETITION OF BLOOM ENERGY CORPORATION FOR A  
DECLARATORY RULING THAT ITS SOLID OXIDE FUEL  
CELL ENERGY SERVER WILL QUALIFY AS A CLASS I  
RENEWABLE ENERGY SOURCE**

This Decision is adopted by the following Directors:

Arthur H. House

John W. Betkoski, III

**CERTIFICATE OF SERVICE**

The foregoing is a true and correct copy of the Decision issued by the Public Utilities Regulatory Authority, State of Connecticut, and was forwarded by Certified Mail to all parties of record in this proceeding on the date indicated.



---

Kimberley J. Santopietro  
Executive Secretary  
Department of Energy and Environmental Protection  
Public Utilities Regulatory Authority

September 12, 2012

---

Date



## **Exhibit 4**



PROPOSED PAD LOCATION - FACING NORTH



PROPOSED PAD LOCATION - FACING SOUTHEAST



PROPOSED PAD LOCATION - FACING EAST



PROPOSED PAD LOCATION - FACING BUILDING

## **Exhibit 5**





## Energy Server 5

*Clean, Reliable, Affordable Energy*



### **CLEAN, RELIABLE POWER ON DEMAND**

The Energy Server 5 delivers clean power that reduces emissions and energy costs. The modular architecture enables the installation to be tailored to the actual electricity demand, with a flexibility to add servers as the load increases. The Energy Server 5 actively communicates with Bloom Energy's network operations centers so system performance can be monitored 24 hours per day, 365 days per year.

### **INNOVATIVE TECHNOLOGY**

Utilizing solid oxide fuel cell (SOFC) technology first developed for NASA's Mars program, the Energy Server 5 produces clean power at unprecedented efficiencies, meaning it consumes less fuel and produces less CO<sub>2</sub> than competing technologies. Additionally, no water is needed under normal operating conditions.

### **ALL-ELECTRIC POWER**

The Energy Server 5, which operates at a very high electrical efficiency, eliminates the need for complicated and costly CHP systems. Combining the standard electrical and fuel connections along with a small footprint and sleek design, the Energy Server 5 is the most deployable fuel cell solution on the market.

### **CONTROLLED AND PREDICTABLE COST**

By providing efficient on-site power generation, the economic and environmental benefits are central to the Energy Server 5 value proposition. Bloom Energy customers can lock in their long term energy costs and mitigate the risk of electricity rate increases. The Energy Server 5 has been designed in compliance with a variety of safety standards and is backed by a comprehensive warranty.

### **About Bloom Energy**

Bloom Energy is making clean, reliable energy affordable. Our unique on-site power generation systems utilize an innovative fuel cell technology with roots in NASA's Mars program. By leveraging breakthrough advances in materials science, Bloom Energy systems are among the most efficient energy generators, providing for significantly reduced operating costs and dramatically lower greenhouse gas emissions. Bloom Energy Servers are currently producing power for many Fortune 500 companies including Apple, Google, NSA, Walmart, AT&T, eBay, Staples, as well as notable non-profit organizations such as Caltech and Kaiser Permanente.

### **Headquarters:**

Sunnyvale, California

### **For More Information:**

[www.bloomenergy.com](http://www.bloomenergy.com)

# Energy Server 5

## Technical Highlights (ES5-AA1AA0)

### Outputs

Nameplate power output (net AC)	262.5 kW
Base load output (net AC)	250 kW
Electrical connection	480 V, 3-phase, 60 Hz

### Inputs

Fuels	Natural gas, directed biogas
Input fuel pressure	10-18 psig (15 psig nominal)
Water	None during normal operation

### Efficiency

Cumulative electrical efficiency (LHV net AC)*	65-53%
Heat rate (HHV)	5,811-7,127 Btu/kWh

### Emissions

NO <sub>x</sub>	< 0.01 lbs/MWh
SO <sub>x</sub>	Negligible
CO	<0.05 lbs/MWh
VOCs	< 0.02 lbs/MWh
CO <sub>2</sub> @ stated efficiency	679-833 lbs/MWh on natural gas; carbon neutral on directed biogas

### Physical Attributes and Environment

Weight	14.3 tons
Dimensions (variable layouts)	14'9" x 8'9" x 7' or 29'6" x 4'5" x 7'5"
Temperature range	-20° to 45° C
Humidity	0% - 100%
Seismic vibration	IBC site class D
Location	Outdoor
Noise	< 70 dBA @ 6 feet

### Codes and Standards

Complies with Rule 21 interconnection and IEEE1547 standards
Exempt from CA Air District permitting; meets stringent CARB 2007 emissions standards
Product Listed by Underwriters Laboratories Inc. (UL) to ANSI/CSA FC 1-2014

### Additional Notes

Access to a secure website to monitor system performance & environmental benefits
Remotely managed and monitored by Bloom Energy
Capable of emergency stop based on input from the site

\* 65% LHV efficiency verified by ASME PTC 50 Fuel Cell Power Systems Performance Test

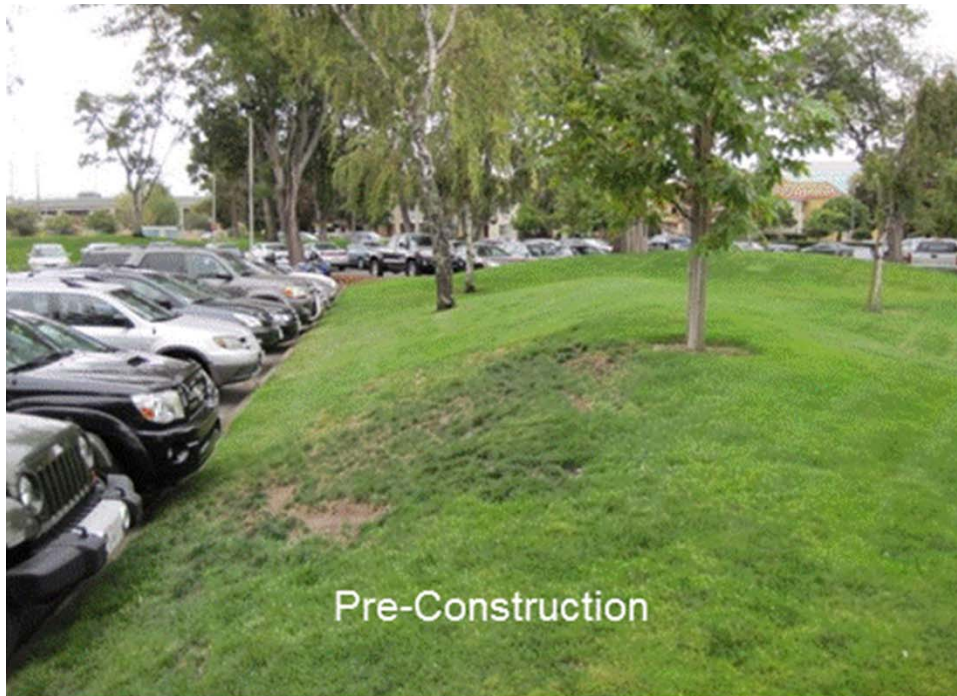


Bloom Energy Corporation  
1299 Orleans Drive  
Sunnyvale CA 94089  
T 408 543 1500  
www.bloomenergy.com

# Bloom Energy Server







Pre-Construction



Install Preparations – Trenching & Underground Utility



Set Pads



Site Completion



# Bloom Energy Server Installation





# Representative Installations



## **Exhibit 6**



## *Fire Prevention and Emergency Planning*

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Bloom Energy Corporation, 1299 Orleans Drive, Sunnyvale, CA 94089 USA

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6. Materials Release Procedures
7. Natural Disasters and Severe Weather
  - 7.1 Earthquake
  - 7.2 Flood
8. Utility Outage
9. Good Housekeeping and Maintenance
  - 9.1 Good Housekeeping
  - 9.2 Maintenance
10. Training

## 1. FIRE PREVENTION AND EMERGENCY PLANNING OVERVIEW

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The following document is provided only as a guide to assist you in complying with national and local codes and requirements, as well as to provide other helpful information. It is not intended to supersede the requirements of any standard. You should review the standards for particular requirements that are applicable to your individual situation, and make adjustments to this program that are specific to your company. You will need to add information relevant to your facility in order to develop an effective, comprehensive program.

## 2. FUEL CELL SYSTEM INSTALLATION SAFETY FEATURES

---

The fuel cell system has redundant safety features and in-system checks to ensure that the system will not harm certified technicians or bystanders near the unit. While the actual fuel cells operate at high temperatures, these components do not move, and are contained within many layers of insulation. During normal operation, the unit is cool to the touch and operates quietly.

The fuel cell system is controlled electronically and has internal sensors that continuously measure system operation. If safety circuits detect a condition outside normal operating parameters, the fuel supply is stopped and individual system components are automatically shut down. A Bloom Energy Remote Monitoring and Control Center (RMCC) operator can also remotely initiate any emergency sequence. An Emergency Stop alarm condition initiates an automatic shutdown sequence that puts the fuel cell system into “safe mode” and causes it to stop exporting power. If you have questions about any of these safety features, please contact Bloom Energy.

**If you have to shut down your fuel cell system right away**—for example, in case of a building fire or electrical hazard—three shutoff controls are installed at your facility external to the system. The locations of these three controls should be known to your facilities manager before operation, and should be noted on your facility diagram that you created with your Bloom Energy account manager. The three shutoffs are the **EPO button**, the **electrical disconnect**, and the **natural gas shutoff valve**.

- An **Emergency Power Off (EPO) Button** cuts all power to all systems and stops them from exporting power to your building. All natural gas flow is also stopped within the systems. (The EPO button is on the front/side of the EDM, if an EDM is installed.) Lift the protective cover and break the glass seal that covers the button with the attached hammer. After the glass seal is broken, the shutdown sequence will automatically begin.





Figure 1: Emergency Power Off Button

- An **electrical disconnect** manually disconnects systems from the grid if needed. Pressing the EPO button should already stop any power transmission, but it does not hurt the systems to also open this disconnect if you believe it is needed. The location of this disconnect will vary, however it is typically located near the point of interconnection where the wires from the fuel cell installation meet the facility's electrical framework. This may be inside your facility's electrical room, or if the fuel cell installation is near the electrical room, it may be found within the switchgear that Bloom Energy installs. This location of this disconnect is shown on the Site Map (see below) and is labeled "(name of electrical utility) Lockable Visible Generator Disconnect Switch".



Figure 2: Electrical Disconnect

- A **manual natural gas valve** shuts down all natural gas to the system. If the valve operator is perpendicular to the pipe, the valve is shut. If it is parallel with the pipe, the valve is open.



Figure 3: Manual Natural Gas Valve

#### Site map:

- An overhead site map showing the location of all safety features will be posted throughout the fuel cell installation
- Electronic copies are available to you for use in your site planning

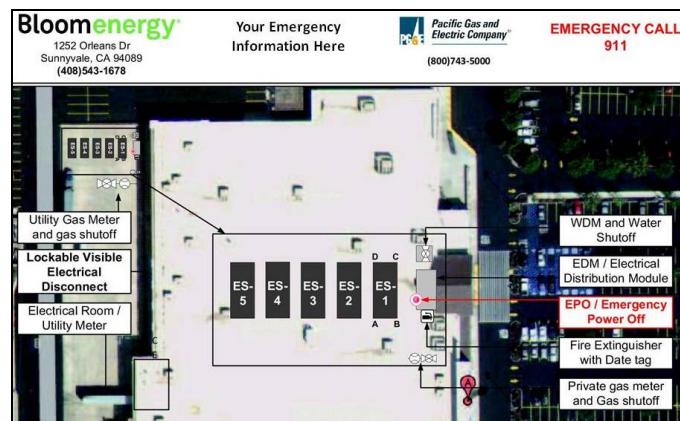


Figure 4: Sample Site Map

#### Manual controls:

- Clearly marked emergency stop button labeled “Fuel Cell Emergency Shut Down” located at site
- Two manual fuel shutoff valves outside the system, and two isolation valves inside the system

#### Fire hazard mitigation:

- System is plumbed directly to utility-provided natural gas
- If system input gas pressure is compromised, a pressure switch triggers an emergency system shutdown and fuel input is isolated
- System does not use fuel compressors or pumps
- System has virtually no stored fuel (internal capacity is < 5 scf)

#### Electrical hazard and mitigation:



- System operates at 480V
- Signs inside the system warn of the risk of electric shock
- System has backfeed protection
- System inverter prevents grid backfeed during a power outage

**Mechanical hazard and mitigation:**

- Finger/hand guard protection is provided on all fans
- All moving parts are located behind secured doors

**Material hazard mitigation:**

- Desulfurizer bed (to remove fuel impurities) are fully enclosed
- Maintained and serviced by licensed vendors

### 3. EMERGENCY NOTIFICATION PROCEDURES

---

**Life-Threatening Emergencies**

To report life-threatening emergencies, immediately call:

<b>Fire:</b>	<b>911</b>
<b>Ambulance:</b>	<b>911</b>
<b>Police:</b>	<b>911</b>

Conditions that require automatic emergency notification include:

- Unconscious Victim
- Seizure
- Major Trauma
- Chest Pains
- Difficulty Breathing
- Flames

**Non-Life-Threatening Emergencies**

For non-life-threatening emergencies, report the incident to the local safety control center.

When you report an emergency, give the following information:

- Exact nature of the emergency (describe as clearly and accurately as possible).
- Exact location (i.e., address, building, floor, area, department, etc.).
- Telephone number from which you are calling.
- Your full name.
- ***Do not hang up***, as additional information may be needed.

To assist in any subsequent investigation or determination of corrective actions, it is recommended to record the following items as close to the incident time as possible:

- Summary of any violation

- Identification of responsible parties
- Identification of victims and witnesses
- Description of evidence
- Description of general conditions
- Description of any vehicles involved
- Narratives from witnesses
- Any photographs

## 4. FIRE OR SMOKE PROCEDURES

---

This section describes the procedures involving a fire or smoke. A major fire is one that requires the use of more than one fire extinguisher or takes more than one minute to extinguish.

If you discover a fire or smoke:

1. Activate the nearest fire alarm if not activated already.
2. Activate the fuel cell Emergency Stop if possible.
3. Shut off the fuel cell installation natural gas line if possible.
4. If the fire is small and does not pose an immediate risk to personal safety, you may attempt to extinguish it with a portable fire extinguisher **only if trained to do so**.
5. Avoid using water on electrical fires.
6. Report every fire, regardless of size, immediately. Smoke or the smell of smoke should be reported.
  - From a safe location dial **911**.
  - Report the incident to the local security safety center.

## 5. MEDICAL EMERGENCY PROCEDURES

---

This section describes the necessary procedures for injuries or illnesses that may occur under extreme conditions.

A serious injury can be life-threatening and will require immediate medical attention. Injuries can include head injuries, spine injuries, broken bones, heart attack, stroke, loss of consciousness, excessive bleeding, chemical exposure, etc.

A non-serious injury is not immediately life-threatening but may still require the attention of a medical doctor. These can include headaches, nausea, itching, cuts, burns, etc.

### Life-Threatening Medical Emergency

1. Remain calm.
2. Immediately dial 911.
3. Report the incident to local security safety center.
4. Do not move the victim unless it is absolutely necessary.
5. Call out for personnel trained in first aid and/or CPR which may include Building Evacuation or Emergency Response team members.

6. Ask someone to bring the area first aid kit and Automated External Defibrillator.
7. Assist if capable or asked to do so.

### **Non-Life-Threatening Medical Emergency**

1. Remain calm.
2. Report the incident to the local security safety center.
3. Do not move the victim unless it is absolutely necessary.
4. Call out for personnel trained in first aid.
5. Ask someone to bring the area first aid kit.
6. If the victim requires further medical attention, then direct them to the nearest approved medical clinic or hospital – Contact Security or Human Resources for assistance if needed.
7. The injured employee's supervisor/manager is responsible for ensuring injury forms are properly filled out. Complete the forms within 24 hours of incident and submit to the injury reporting system for follow-up. Follow company protocols.

## **6. MATERIALS RELEASE PROCEDURES**

---

The fuel cell system does not pose a hazard to health or environment. However, some internal materials when released, may pose a irritation risk to people and a possible risk of fire if not properly handled. This section was designed to address potential material release events:

In case of a material release that poses a direct threat to health, safety, or the environment:

1. Report the incident to local safety/security office.
2. If extremely life-threatening immediately dial **911** followed with a call to Security.
3. Contain the spill.
4. Evacuate the area or building if the material release is determined to be life-threatening.

In the event of an unknown indoor smell or odor, report the incident to authorities responsible for HAZMAT and spills.

## **7. NATURAL DISASTERS AND SEVERE WEATHER**

---

### **7.1 Earthquake**

This section provides information and procedures for earthquake emergencies.

The fuel cell system is designed to automatically shut off if the natural gas supply is compromised.

The natural gas supply line has an external, manual shut-off valve that should be activated if it is safe to do so. This valve will be labeled, "Notice – Fuel Cell Gas Shut

Off". The natural gas line will be labeled with the word "gas" on a yellow background with an arrow pointing in the direction of flow.

The nearby Emergency Stop can be activated to stop the flow of fuel and power to/from the fuel cell system.

A Bloom Energy Field Engineer will validate site safety and system operation during/after severe weather as necessary.

## **7.2 Flood**

The fuel cell system support pad is designed to divert water flow. However, if flooding conditions exist, or threaten to exist due to heavy rainfall, creek bank overflows, or pipe breakage, then immediately report the incident to the local safety/security office.

Do not use the fuel cell power system if any part has been under water. If it is safe to reach the Emergency Power Off button for the site without entering the water, stop all systems until a Bloom Energy representative can assess the site.

Precautions to follow after a flood:

- Stay out of flooded areas. Flooded areas remain unsafe. Entering a flooded area places you at risk.
- Notify Bloom Energy. A Bloom Energy Field Engineer will validate site safety and system operation during/after severe weather as necessary

## **8. UTILITY OUTAGE**

---

The fuel cell system is operated in "Grid-Parallel" mode. If utility provided power is lost for any reason, the fuel cell system will go "off-line". The fuel cell system will remain in stand-by mode until it automatically senses the utility grid has been restored. If utility gas is shut down, the fuel cell system will begin to shut down completely.

The Bloom Energy Remote Monitoring Control Centers monitor the fuel cells 24 hours per day and will be alerted to utility grid interruptions via its controls software. A Field Service Engineer will be dispatched to restart the fuel cell system if necessary. Customer personnel should NOT attempt to start up or operate the fuel cell system.

### **Before a Planned Outage**

- Notify the Bloom Energy Remote Monitoring Control Center at 1-408-543-1678 at least 24 hours before planned outage.
- Bloom Energy Remote Monitoring Engineers will reduce power generated by the fuel cell system and take the fuel cell off-line.
- Abrupt fuel cell system shutdowns may cause significant system damage.

### During a Utility Power Loss

- The fuel cell system will automatically go off-line.
- The Bloom Energy Remote Monitoring Control Centers will monitor the fuel cell system.
- Bloom Energy Field Service will be dispatched to start up the fuel cell system as necessary.
- If the fuel cell system has been automatically shut down and utility power is restored, there will be no impact to building power delivery: primary power will come from the utility rather than the fuel cells.

## 9. GOOD HOUSEKEEPING AND MAINTENANCE

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### 9.1 Good Housekeeping

Although extremely unlikely, to minimize the risk of fire and any incidents, Facility Managers should take the following precautions around the fuel cell installation:

- What to do if you smell gas:
  - Do not try to light any appliance
  - Do not touch any electrical switch; do not use any phone in the area
  - Leave the area immediately
  - Immediately call your gas supplier. Follow the gas supplier's instructions.
  - If you cannot reach your gas supplier, call the fire department
- Notify Bloom Energy Remote Monitoring Control Center at 1-408-543-1678 of any condition that would impair the safety of the fuel cell installation so that mitigation measures could be determined and placed into effect.
- Prohibit smoking within the area of the fuel cell installation. Bloom Energy will furnish No Smoking signs for the area.
- Ensure only Bloom Energy Service Providers are permitted access inside the system.
- Keep the area around the fuel cell installation clear for ten feet in all directions, for safety and ease of maintenance.
- Keep the area around the fuel cell power system clear and free of combustible materials, gasoline, and other flammable vapors and liquids.
- Shut the system down and call Bloom Energy immediately if you suspect a fuel line rupture.
- **Never enclose an operating system** in a tarp, tent, shed, or other structure that would allow air to become trapped. This system runs on natural gas, and produces trace amounts of CO and CO<sub>2</sub>. The amounts of these gases are safe for normal outdoor operation but could gather in an enclosed place.
- Do not block or obstruct air openings on the fuel cell power system. This system requires air flow in order to operate.

- Do not use this fuel cell power system if any part has been under water. Immediately call qualified service personnel to inspect the fuel cell power system and to replace any functional part which has been under water.
- Please contact Bloom Energy at 408-543-1678 with as much advance notice as possible if you plan, detect, or suspect a prolonged Internet outage.
- The Bloom Energy Field Service team will periodically clean the equipment; do not spray with pressurized hoses.

## **9.2 Maintenance**

Your site has specific Field Service personnel assigned to it for both routine maintenance and troubleshooting. Your site project manager will introduce you to the designated Bloom Energy Field Service team assigned to your site prior to operation.

Bloom Energy Field Service personnel are trained in state Safety Law. They are trained in all the procedures required for the fuel cell installation, and their toolkit includes all the safety equipment required to work around the fuel components and high voltage in our system (480VAC).

Bloom Energy also requires its employees to follow all necessary safety precautions, including:

- Every time a Field Service technician arrives at a site for the first time and opens a service panel, the technician will use a leak detector to determine whether there is any gas buildup in the system and determine that it is safe to work on it.
- Whenever a Field Service technician is removing and replacing a component on a fuel or exhaust line, the technician must keep a CO detector nearby to make sure that no CO is present in the line even after the system has been shut down.

The Field Service team expects to conduct quarterly and yearly preventative maintenance for certain types of consumable or cleanable components such as replacement of air filters, water filters, and desulfurizer beds. Other maintenance will be performed as required. During such times, inspections for any hazards will be conducted including quarterly fire extinguisher inspection (if applicable).

## **10. TRAINING**

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Prior to system startup, a Bloom Energy representative will provide training on the fuel cell installation to include the location and operation of safety features as well as actions to take during emergencies. We desire this training to provide lasting value and are more than happy to work with you to customize the experience to suit your needs.

## **Exhibit 7**



Municipal Official/Agency	Name/Address
New Britain Mayor	Erin E Stewart 27 West Main Street, New Britain, CT
New Britain Zoning	Edward Dzwonkowski, Chairman 27 West Main Street Room 311 New Britain, CT 06051
New Britain Inland Wetlands & Watercourses Agency	Lousin G Amodio, Commissioner 27 West Main Street Room 313 New Britain, CT 06051
New Britain State Senator	Terry Gerratana Legislative Office Building Room 300 Hartford, CT 06106-1591
New Britain State Representative	Elizabeth Boukus Legislative Office Building Room 4017 Hartford, CT 06106-1591
New Britain State Representative	Rick Lopes Legislative Office Building Room 1004 Hartford, CT 06106-1591
New Britain Connecticut Attorney General	George Jepsen 55 Elm Street Hartford, CT 06106
State Development of Energy and Environmental Protection	Rob Klee, Commissioner Department of Energy and Environmental Protection 55 Elm Street Hartford, CT 06106
State Department of Public Utility	Arthur House, Chairman Department of Energy & Environmental Protection Public Utilities Regulatory Authority 10 Franklin Square New Britain, CT 06051
State Department of Public Health	Dr. Jewel Mullen, Commissioner Department of Public Health 410 Capitol Ave. Hartford, CT 06134
State Council on Environmental Quality	Susan D. Merror, Chair Council on Environmental Quality 79 Elm Street Hartford, CT 06106
State Department of Agriculture	Steven K. Reviczky, Commissioner Department of Agriculture 165 Capitol Avenue Hartford, CT 06106
Office of Policy & Management	Benjamin Barnes, Secretary Office of Policy and Management

	450 Capital Ave. Hartford, CT 06106
State Department of Economic & Economic Community Development	Catherine Smith, Commissioner Department of Economic and Community Development 505 Hudson Street Hartford, CT 06106
State Department of Transportation	James P. Redeker, Commissioner Department of Transportation 2800 Berlin Turnpike Newington, CT 06111

E1D 26 OWCZARCZYK PAUL + 199 NANCY RD NEW BRITAIN CT 06053	D2C 59 KHAMBAYLARSIRIKUL CALVIN + 933 SLATER RD NEW BRITAIN CT 06053	D2C 12 VERENEAU LINDA R 47 JAMES AVE NEW BRITAIN CT 06053
D2C 902 CCARC INC 950 SLATER RD NEW BRITAIN CT 06053	E1D 30 NEW BRITAIN CITY OF - LAND 27 WEST MAIN ST NEW BRITAIN CT 06051	D2C 11 SMITH TAMIRA 41 JAMES AVE NEW BRITAIN CT 06053
D2C 15 REWA MARIAN + 65 JAMES AVE NEW BRITAIN CT 06053	D2C 14 BELOIN WILFRED LEWIS JR + 59 JAMES AVE NEW BRITAIN CT 06053	E1D 32 ZAZULA EUGENIUSZ + BEATA 15 BUNKER HILL RD NEW BRITAIN CT 06053
D2C 60 FLORES-SEPULVEDA CANDIDA + 941 SLATER RD NEW BRITAIN CT 06053	E1D 34 SEVIGNY GILLES L + 27 BUNKER HILL RD NEW BRITAIN CT 06053	D2C 17 TYBOR ANDRZEJ + TYBOR IRENA + 73 JAMES AVE NEW BRITAIN CT 06053
D2C 61 WELLS KAREY 949 SLATER RD NEW BRITAIN CT 06053	E1D 28 CAJIGAS MARIA B 89 JAMES AVE NEW BRITAIN CT 06053	D2B 100 WACHOVIA SERVICES CORPORATION C/O MAC D1052-124 CHARLOTTE NC 28202
E1D 31 DZIADIK KATHLEEN ELLEN + 11 BUNKER HILL RD NEW BRITAIN CT 06053	E1D 33 PEREZ MIRIAM 1707 DEKALB AVE BROOKLYN NY 11237	E1D 29 DALEY KEVIN J 5 BUNKER HILL RD NEW BRITAIN CT 06053
D2C 16 SOCHAN HAROLD 69 JAMES AVE NEW BRITAIN CT 06053	D2C 10 ARCE MARIA I + 37 JAMES AVE NEW BRITAIN CT 06053	D2B 3 ST JEROMES ROMAN CATHOLIC 1010 SLATER RD NEW BRITAIN CT 06053
D2B 3 ST JEROMES ROMAN CATHOLIC 1010 SLATER RD NEW BRITAIN CT 06053	D2B 3 ST JEROMES ROMAN CATHOLIC 1010 SLATER RD NEW BRITAIN CT 06053	E1D 25 DUBE DOROTHY S 77 JAMES AVE NEW BRITAIN CT 06053
D2C 2 HAZE LEONARD J 924 SLATER RD NEW BRITAIN CT 06053	D2C 13 HAVELEVITCH DENNIS E 53 JAMES AVE NEW BRITAIN CT 06053	D2C 1 HAZE JOHN J 932 SLATER RD NEW BRITAIN CT 06053
E1D 153 FRANCO MARIA 205 NANCY RD NEW BRITAIN CT 06053	D2C 9 HERNANDEZ TIMMY & DOROTHY 31 JAMES AVE NEW BRITAIN CT 06053	D2B 300 STANLEY SECURITY SOLUTIONS INC C/O US TAX CONSULT GROUP INC DUBLIN PA 18917-1

D2C 75

HAZE JOHN J + LEONARD J +

932 SLATER RD

NEW BRITAIN CT 06053

D2B 200

WACHOVIA DEVELOPMENT CORP

C/O USTCG

DUBLIN PA 18917-1

WACHOVIA SERVICES CORPORATION  
301 S COLLEGE ST  
CHARLOTTE NC 28202

WACHOVIA DEVELOPMENT CORP  
PO BOX 1029  
DUBLIN PA 18917

HARTFORD CITY OF  
  
00000

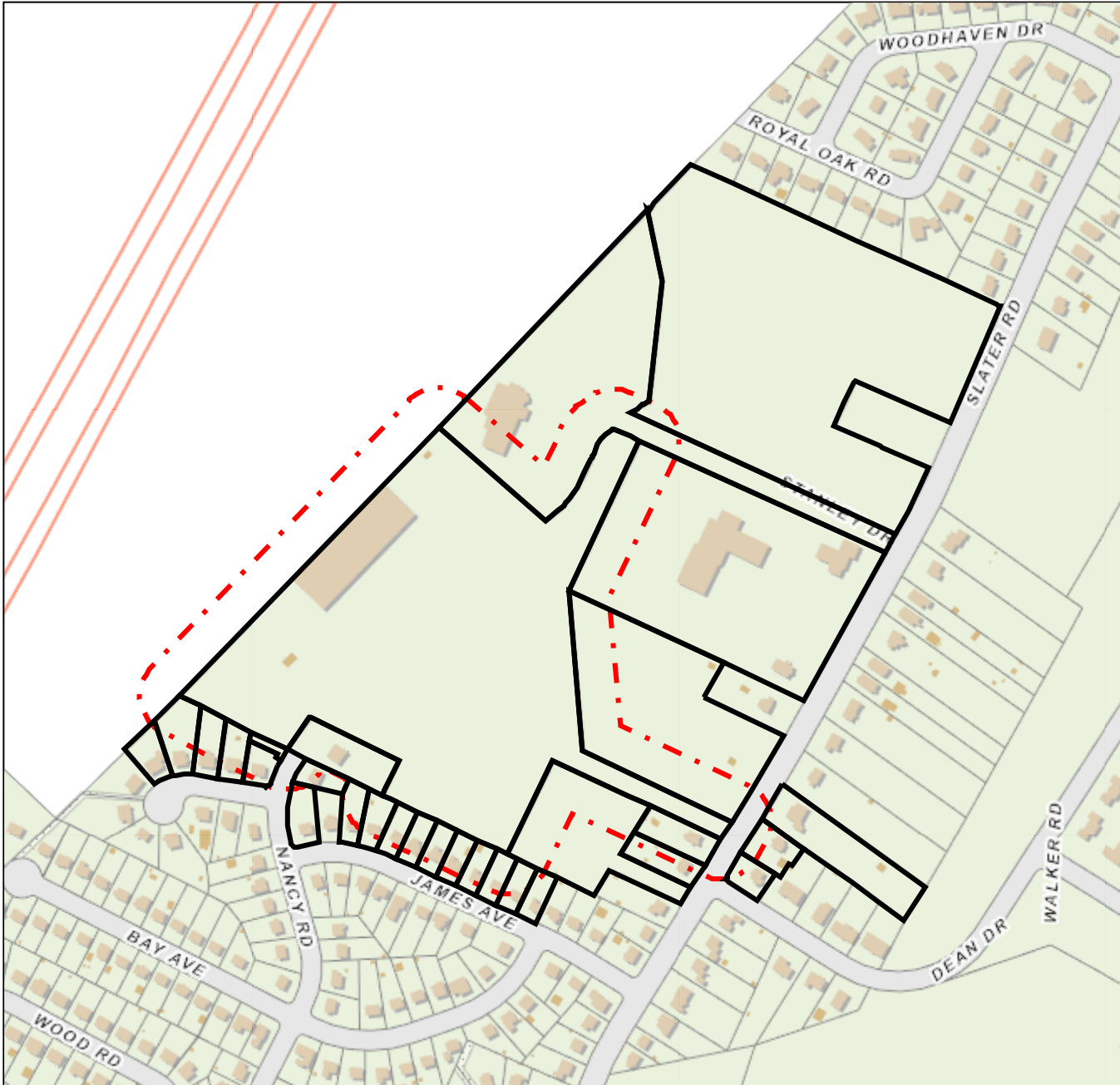
## **Exhibit 8**

# City of New Britain

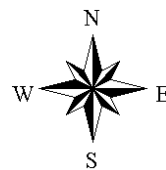
## Geographic Information System (GIS)



Date Printed: 10/13/2016

**MAP DISCLAIMER - NOTICE OF LIABILITY**

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The City of New Britain and its mapping contractors assume no legal responsibility for the information contained herein.



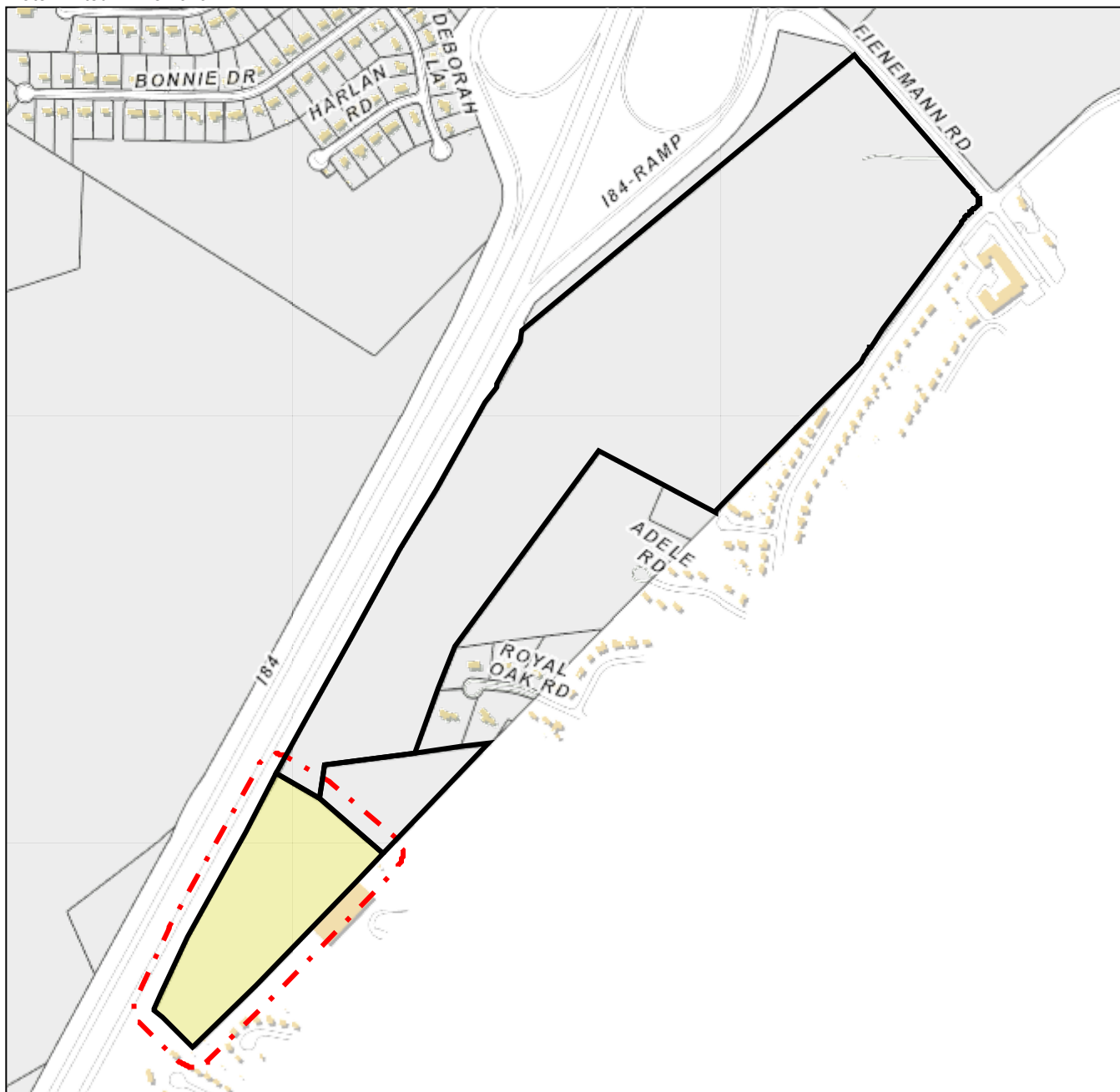


# Town of Farmington

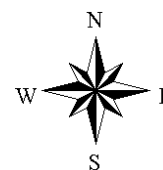
## Geographic Information System (GIS)



Date Printed: 11/18/2016

**MAP DISCLAIMER - NOTICE OF LIABILITY**

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## **Exhibit 9**



November 29, 2016

City of New Britain  
Planning and Zoning  
27 West Main Street  
New Britain, CT 06051

Attn: Sergio Lupo

RE: Bloom Energy Server Project  
1020 Slater Road, New Britain, Connecticut

Mr. Lupo,

On behalf of Bloom Energy we would like to provide you with information pertaining to the proposed clean energy server installation project located at the Stanley Black & Decker facility.

This project proposes to install one (1) new Bloom Energy Server; a new class of distributed power generator which produces clean, reliable and affordable electricity at the customer site. The Bloom Energy Server contains solid oxide fuel cells which provide 250 kW of power, utilizing a non-combustive chemical process. The Clean Energy Server are mounted onto an approximately 29'-5" x 4'-3" concrete pad. Placement of the Clean Energy Server and related ancillary equipment is being proposed within a landscape island within the parking field near the south east corner of the Stanley Black & Decker Building (please see attached site plan). The purpose of the proposed project is to replace a portion of the average baseload of the Stanley Black & Decker facility with a Class I renewable energy source and improve reliability of electrical systems and equipment.

The Bloom equipment has been designed in compliance with Underwriters Laboratories (UL) in addition to various safety standards and requirements. There are no harmful off-gases or byproducts that will be produced by this equipment.

Please note that the energy server is monitored 24 hours a day, 7 days a week by Bloom Energy's communications network in Sunnyvale, CA with a back-up monitoring station in India. In the unlikely event the system will require attention, the system can be remotely shut off by Bloom. Additionally, the equipment will have several means to shut down the energy server locally.

We are submitting to the Connecticut Siting Council within the next two weeks and wanted to give you an opportunity to see the plans in advance. We would be happy to discuss any comments you may have either by phone or in person. Keeping the lines of communication open is an important part of our work in your community. If you have questions about this work, please contact me

Thank you,  
Bloom Energy

A handwritten signature in black ink, appearing to read "Justin Adams".

Justin Adams  
(860) 839-8373

justin.adams@bloomenergy.com



November 29, 2016

City of New Britain  
City Mayor  
27 West Main Street  
New Britain, CT 06051

Attn: Erin Stewart – City Mayor

RE: Bloom Energy Server Project  
1020 Slater Road, New Britain, Connecticut – Stanley Black & Decker

Ms. Stewart,

We would like to provide you with information pertaining to the proposed clean energy server installation project located at the Stanley Black & Decker facility.

This project proposes to install one (1) new Bloom Energy Server; a new class of distributed power generator which produces clean, reliable and affordable electricity at the customer site. The Bloom Energy Server contains solid oxide fuel cells which provide 250 kW of power, utilizing a non-combustive chemical process. The Clean Energy Server are mounted onto an approximately 29'-5" x 4'-3" concrete pad. Placement of the Clean Energy Server and related ancillary equipment is being proposed within a landscape island within the parking field near the south east corner of the Stanley Black & Decker Building (please see attached site plan). The purpose of the proposed project is to replace a portion of the average baseload of the Stanley Black & Decker facility with a Class I renewable energy source and improve reliability of electrical systems and equipment.

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Thank you,  
Bloom Energy

A handwritten signature in black ink, appearing to read "Justin Adams".

Justin Adams  
(860) 839-8373  
justin.adams@bloomenergy.com



November 29, 2016

VIA FIRST CLASS MAIL

RE: Petition for Bloom Energy, as Agent for Stanley Black and Decker, for the installation of one (1) new ES-5 Bloom Energy Servers solid oxide fuel cells which provide 250 Kw OF Customer-Side Distributed Resource at – 1020 Slater Road, New Britain, Connecticut

Dear Ladies and Gentlemen:

Pursuant to Section 16-50-40 of the Connecticut Siting Council's (the "Council") regulations, we are notifying you that Stanley Black and Decker intends to file on or shortly after 12/05/16, a petition for declaratory ruling with the Council. The petition will request the Council's approval of the location and construction of an approximately 250 kilowatt Bloom Energy Corporation fuel cell facility and associated equipment (the "Facility"), located at the site of the Stanley Black and Decker building at 1020 Slater Road, New Britain, Connecticut (the "Site"). Electricity generated will be exported to the electric grid. The Facility will be fueled by natural gas.

The proposed placement of the fuel cells is located within the parking field near the southeast corner of the building. In total, the proposed Facility will be approximately 29 feet long, 4 feet wide, and 7 feet high.

If you have any questions regarding the proposed Facility, please contact the undersigned or the Council.

Respectfully,  
Bloom Energy

A handwritten signature in black ink, appearing to read "Justin Adams".

Justin Adams  
(860) 839-8373  
justin.adams@bloomenergy.com